

Compilation of work from various stakeholders



Robot Revolution & Industrial IoT Initiative  
ロボット革命イニシアティブ協議会



STANDARDIZATION  
COUNCIL  
INDUSTRIE 4.0



**SIEMENS**  
*Ingenuity for life*

The 4th RRI Industrial IoT International Symposium for Connected Industries, Tokyo Big Sight

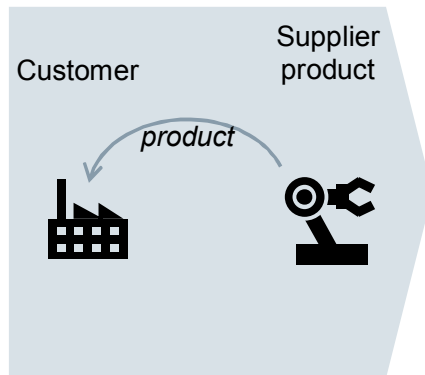
# Platform Economy and Standardization

Ulrich Löwen, October 19<sup>th</sup>, 2018

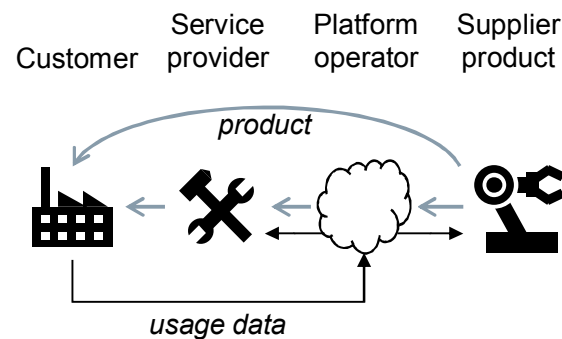
# Application Scenario Value-based Service

## View on Industrial IoT of Plattform Industrie 4.0

### Today



### Tomorrow



### Main characteristics of Value-based Service

- Possible new business roles: operator of IoT platform and service provider of data-driven services
- Application scenario not focused on manufacturing industries and can be applied in other industries also
- Manifold benefits and opportunities have been already elaborated

### Platform economy

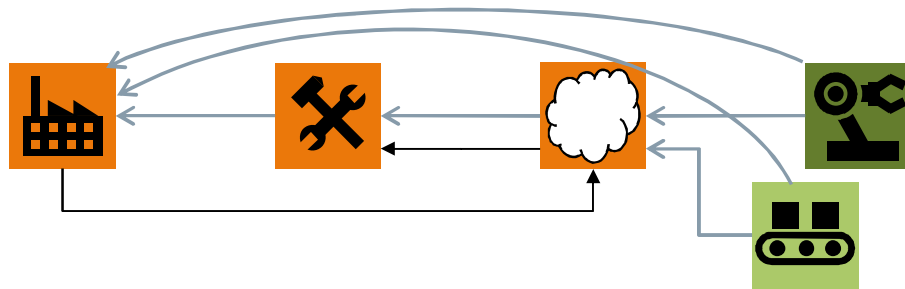
- A **platform operator** is establishing itself as a new business stakeholder in a value added network

# Business View of Application Scenario Value-based Services

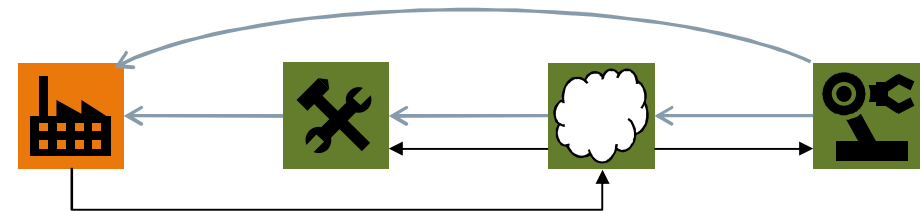
Variety of different business setups (extract)



## Production and process optimization

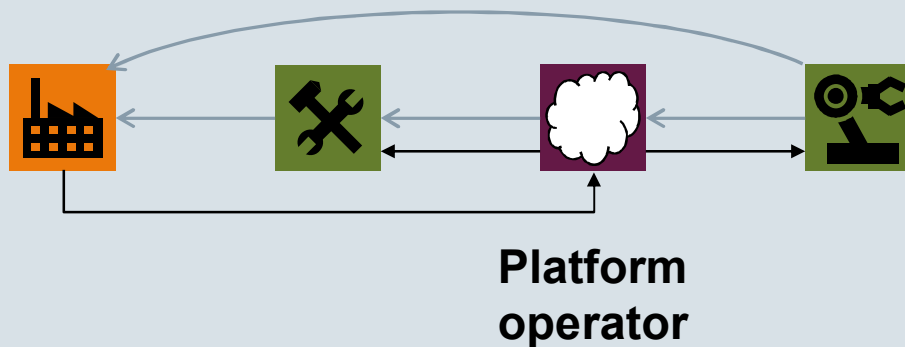


## Availability as a service

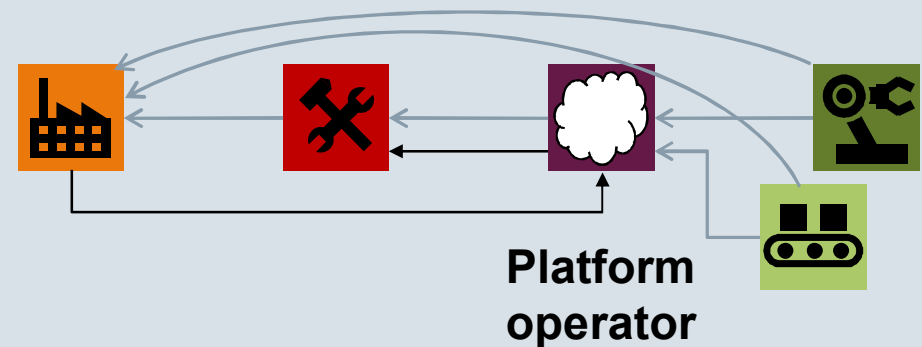


## Examples for Platform Economy

### Data-driven services



### Production scheduling services



# Usage View of Application Scenario Value-based Service

## Technical systems description in its application context

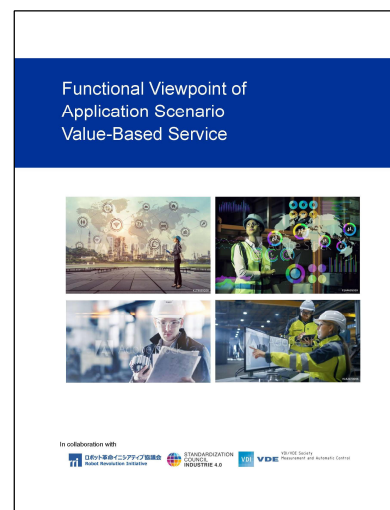
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**Joint publications** on different level of detail, based on international standards

- Usage viewpoint of IIRA (based ISO/IEC/IEEE 42010) resp. IEC 62559-2



driven by GER-team



driven by JP-team

**Common understanding** as basis for joint activities in the context of platform economy and initiation of technical standardization activities

# Example for a Specific Activity of Usage View

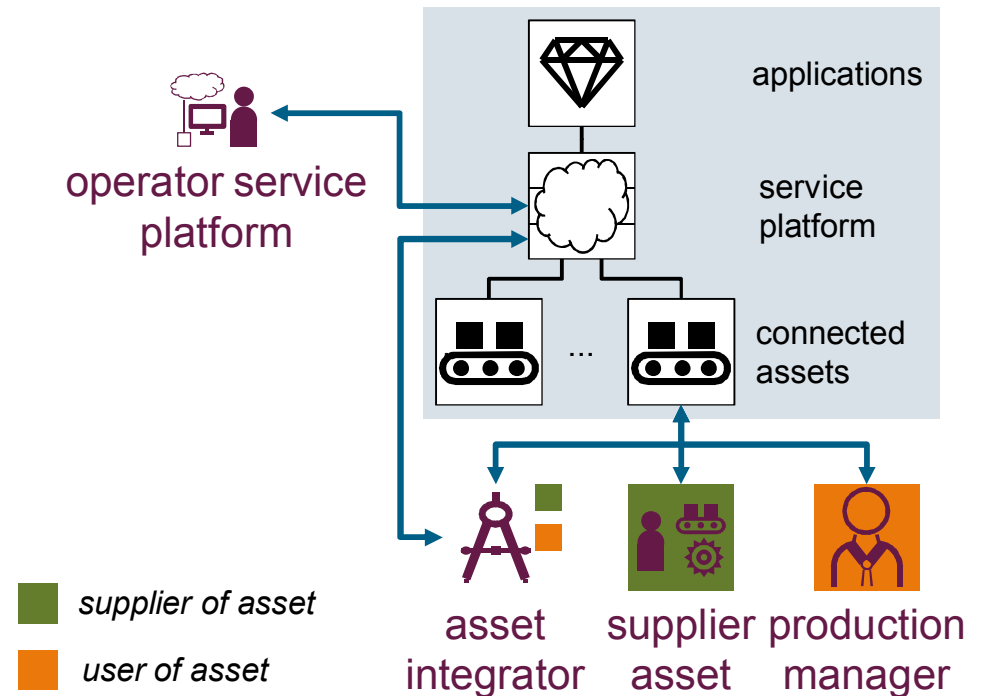
## Connection of Assets to an Internet-of-Things Platform

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**Triggers:** initiated and designed by **production manager**

### Workflow

- **Task 1** “Define data to be transferred”: **role asset integrator & supplier asset**
- **Task 2** “Connect asset to service platform”: **role asset integrator**
- **Task 3** “Provide access to usage data of asset”: **role operator service platform**
- **Task 4** “Validate connection of asset”: **role asset integrator & operator service platform & supplier asset**
- **Task 5** “Acceptance of connection of asset”: **role asset integrator & production manager**



Different interests of **supplier** and **user** of the asset

# Asset Administration Shell

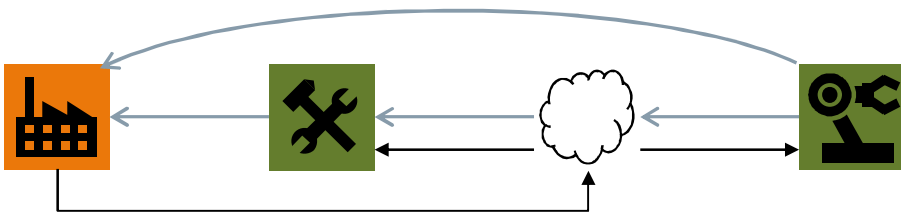
## An Information Technology Concept

### How to use the asset administration shell?

Enabling **interoperability** of assets from an IT perspective

Mechanism to **manage** different business stakeholder having interest in a common asset

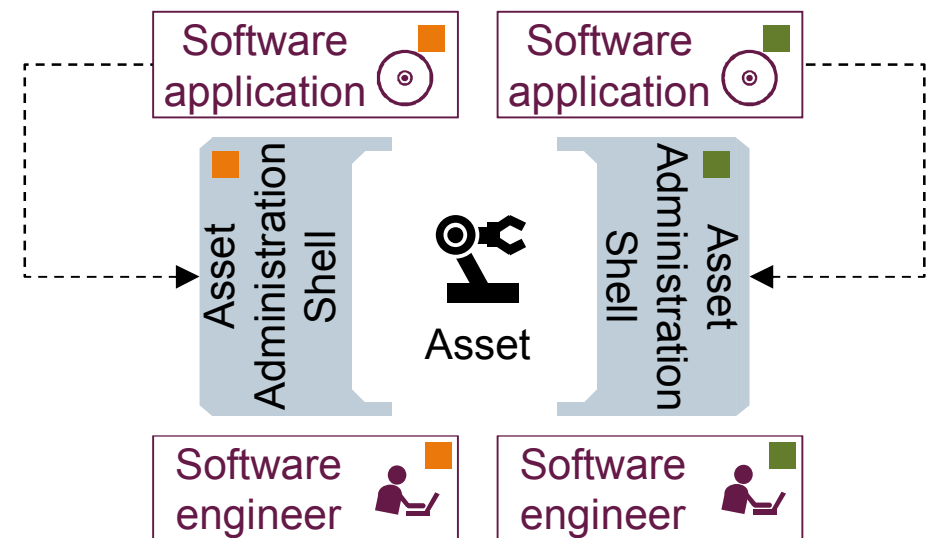
- Protecting intellectual property about an asset



### What is the asset administration shell?

**Asset service registry** providing uniform access to **asset services**

- Secure **access** to asset services
- Possibility to **standardize** asset services



# Status Quo and Summary

## Platform Economy and Standardization

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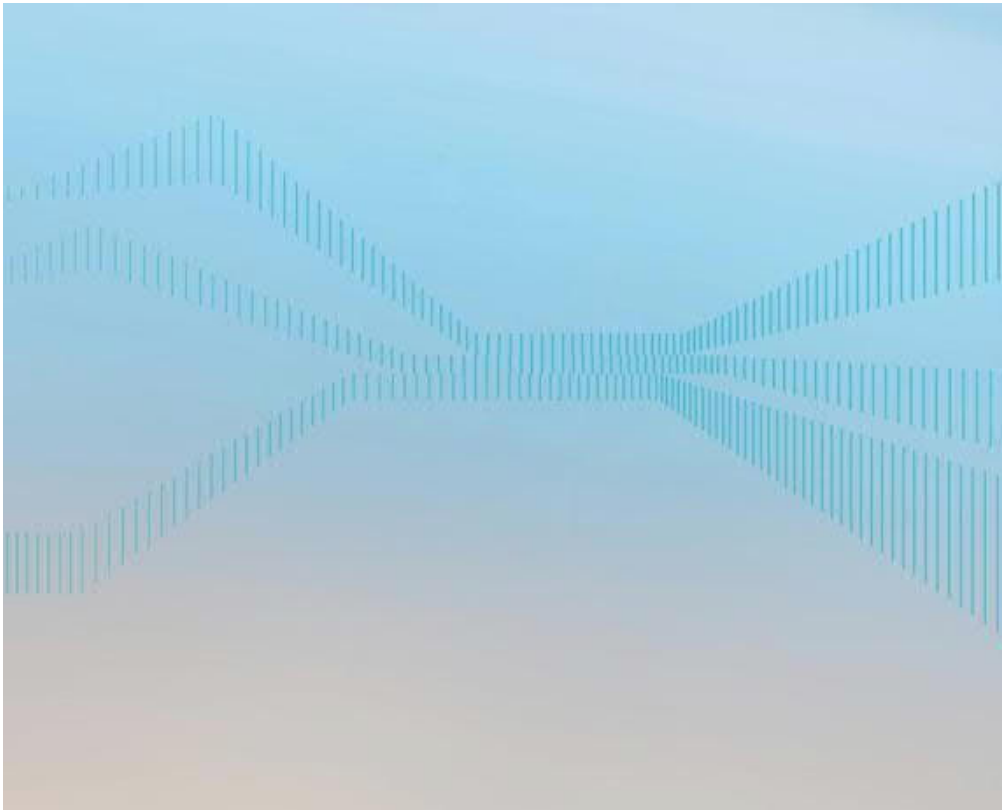
### Standardization

- Germany and Japan have developed a **common** usage view for the Asset Administration Shell
- Many technical activities are ongoing in the context of the Asset Administration Shell; some industries develop first solutions of aspects of the Asset Administration Shell based on OPC-UA
- Challenge will be to select those aspects having the highest potential to be established in the market quickly

### Platform Economy

- Need for action to participate in this trend!
- Availability of appropriate platforms is a prerequisite
- But empower manufacturing companies in **using** such platforms

**Thank you for your attention!**



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